

Appl. No. : 09/865,037
Filed : October 1, 2001

AMENDMENTS TO THE CLAIMS

The listing of claims replaces all prior versions and listings of claims. Only those claims being amended herein show their changes in highlighted form, where insertions appear as underlined text (e.g., insertions) while deletions appear as strikethrough text (e.g., ~~deletions~~). Accordingly, please cancel Claims 11-14 and 16-39 and add Claims 41-54 as follows:

1. (Previously Presented) A method of encoding transformed quantized video data for transmission over a network, comprising:

receiving a matrix of transform coefficients;

isolating specific coefficient locations and groups of coefficients to be represented in a descriptor;

mapping values of coefficients in said specific locations and said groups to defined identifiers;

combining said identifiers to create a first descriptor for the matrix;

including information in said first descriptor to explicitly identify the values at said specific coefficient locations;

creating descriptors smaller than the first descriptor that contain the explicit values of coefficients in said groups of coefficients;

creating entropy encoding schemes for said descriptors and said values of coefficients; and

encoding said descriptors and values of coefficients according to said encoding schemes.

2. (Original) The method of Claim 1, wherein said matrix is a matrix of discrete cosine transform coefficients.

3. (Original) The method of Claim 2, wherein said matrix is a 4 x 4 matrix.

4. (Original) The method of Claim 1, wherein said specific coefficient locations are from a top left quadrant of said matrix.

5. (Original) The method of Claim 4, wherein said groups comprise 2 x 2 coefficient quadrants correspondingly located in top right, bottom left and bottom right portions of the 4 x 4 matrix.

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6. (Original) The method of Claim 1, wherein said coefficient locations and groups of coefficients are mapped to identifiers according to the coefficients' absolute values, and said information includes the signs of the coefficients.

7. (Original) The method of Claim 1, wherein at least a first of said encoding schemes utilizes a static entropy code table created before said encoding by analyzing descriptors created from samples of video data and creating said code table from an analysis of the probabilities of said sample descriptors.

8. (Original) The method of Claim 7, wherein said static entropy code is a static Huffman code.

9. (Original) The method of Claim 1, wherein at least a first of said encoding schemes utilizes an adaptive entropy code that is modified over the course of the encoding process according to the properties of the currently encoded video source.

10. (Original) The method of Claim 9, wherein said adaptive entropy code is an adaptive Huffman code.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Previously Presented) A method of encoding a matrix of transform coefficients comprising:

receiving a matrix of transform coefficients;

creating a probabilistic model representing dependencies and correlations between coefficient locations and groups of coefficients from said matrix; and

utilizing the probabilistic model to create an entropy encoding of the matrix,

wherein said probabilistic model is represented by descriptors that correspond to coefficient locations and groups of coefficients and wherein said descriptors contain internal descriptors that describe the explicit coefficients within groups represented by relatively larger descriptors.

16.-39. (Cancelled)

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40. (Previously Presented) A method of encoding transformed quantized video data for transmission over a network, comprising:

- receiving a matrix of transform coefficients;
- isolating one or more coefficients in specific locations and groups of coefficients to be represented in a descriptor;
- mapping values of the one or more coefficients in said specific locations and said groups to defined identifiers;
- combining said identifiers to create a descriptor for the matrix;
- including information in said descriptor to explicitly identify the values of the coefficients at said specific locations;
- creating a first encoding scheme that describes the explicit values of the coefficients in said groups;
- creating entropy encoding schemes for said descriptor and said values of the coefficients; and
- encoding said descriptor and said values of the coefficients according to said first and entropy encoding schemes.

41. (New) The method of Claim 15, wherein said matrix is a matrix of discrete cosine transform coefficients.

42. (New) The method of Claim 41, wherein said matrix is a 4 x 4 matrix.

43. (New) The method of Claim 40, wherein said matrix is a matrix of discrete cosine transform coefficients.

44. (New) The method of Claim 43, wherein said matrix is a 4 x 4 matrix.

45. (New) The method of Claim 40, wherein said specific coefficient locations are from a top left quadrant of said matrix.

46. (New) The method of Claim 45, wherein said groups comprise 2 x 2 coefficient quadrants correspondingly located in top right, bottom left and bottom right portions of the 4 x 4 matrix.

47. (New) The method of Claim 40, wherein said coefficient locations and groups of coefficients are mapped to identifiers according to the coefficients' absolute values, and said information includes the signs of the coefficients.

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48. (New) The method of Claim 40, wherein at least a first of said encoding schemes utilizes a static entropy code table created before said encoding by analyzing descriptors created from samples of video data and creating said code table from an analysis of the probabilities of said sample descriptors.

49. (New) The method of Claim 48, wherein said static entropy code is a static Huffman code.

50. (New) The method of Claim 40, wherein at least a first of said encoding schemes utilizes an adaptive entropy code that is modified over the course of the encoding process according to the properties of the currently encoded video source.

51. (New) The method of Claim 50, wherein said adaptive entropy code is an adaptive Huffman code.

52. (New) A computer readable storage medium comprising computer program code stored thereon for causing an electronic device to process the computer-program code by performing the method of Claim 1 when such program is executed on the electronic device.

53. (New) A computer readable storage medium comprising computer program code stored thereon for causing an electronic device to process the computer-program code by performing the method of Claim 15 when such program is executed on the electronic device.

54. (New) A computer readable storage medium comprising computer program code stored thereon for causing an electronic device to process the computer-program code by performing the method of Claim 40 when such program is executed on the electronic device.

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